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July 16, 2023

```python
[1]: import pandas as pd
     import numpy as np
     import matplotlib.pyplot as plt
     import seaborn as sns
     import os
```

```python
[2]: os.chdir('/Users/abc/Downloads')
```

```python
[3]: data = pd.read_excel('OldBailey-Defendants.xlsx')
     print(list(data.columns))
```

```
['o2dtid', 'obo_trial', 'obo_deftid', 'sess_date', 'year', 'trial_tagged',
'obv_def_spk', 'speech', 'trial_u_count', 'trial_speech_wc', 'trial_total_wc',
'deft_u_count', 'deft_total_wc', 'deft_u_q', 'deft_u_a', 'deft_u_d', 'deft_u_s',
'deft_given', 'deft_surname', 'deft_gender', 'deft_age', 'deft_occupation',
'deft_offcat', 'deft_offsub', 'deft_vercat', 'deft_versub', 'deft_puncat',
'deft_punsub']
```

```python
[6]: %matplotlib inline

     plt.figure()
     plt.rcParams.update({'font.size': 22})

     pd.crosstab(data.year,data.deft_puncat).plot(kind='bar', subplots=True,␣
       ↪figsize=(40,40),
                                                          title ='Punishments␣
       ↪Frequency for Year',
                                                          xlabel='Year',
                                                          ylabel='Frequency of␣
       ↪Punishments')
```

```
[6]: array([<Axes: title={'center': 'corporal'}, xlabel='Year', ylabel='Frequency of
     Punishments'>,
            <Axes: title={'center': 'death'}, xlabel='Year', ylabel='Frequency of
     Punishments'>,
            <Axes: title={'center': 'imprison'}, xlabel='Year', ylabel='Frequency of
     Punishments'>,
            <Axes: title={'center': 'miscPunish'}, xlabel='Year', ylabel='Frequency
```

```
of Punishments'>,
       <Axes: title={'center': 'noPunish'}, xlabel='Year', ylabel='Frequency of
Punishments'>,
       <Axes: title={'center': 'transport'}, xlabel='Year', ylabel='Frequency of
Punishments'>],
      dtype=object)

<Figure size 640x480 with 0 Axes>
```

Punishments Frequency for Year